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ABSTRACT

This paper looks at the Teacher Education Equity Project, which was designed to bring gender equity to teacher education. Carried out from 1993 to 1996, the project worked with 61 teachers in 27 states who taught methods courses in mathematics, science, and technology to help them teach their preservice students about gender equity. The project was accomplished via a five-day seminar with eight instructors, large quantities of materials, $750 per participant to carry out a mini-grant project, a listserv, bimonthly newsletters, a three-day follow-up meeting conducted by participants themselves, and a considerable amount of support from project staff. The project has had a multiplier effect. In only one year, the 61 teacher educators taught a total of 5,000 preservice education students about gender equity in mathematics, science, and technology, as well as 5,000 others--colleagues, inservice teachers, and parents. Early results indicate that the percentage of participants whose syllabi mentioned gender equity doubled from 23 to 48 percent, while those whose syllabi specifically targeted gender equity increased sevenfold, from 4 to 27 percent. Pre/post teaching measures indicated that 85 percent of participants changed in a more equitable direction. Other problems remain, however. For example, while students learn about these issues in their methods classes, these perceptions must be reinforced in subject courses, other education courses, and by cooperating teachers. In a survey of 344 mathematics, science, and technology methods teachers at American Association of Colleges for Teacher Education (AACTE) institutions, only 17 percent thought they covered gender equity well, usually when it happened to come up in discussion, and only 15 percent mentioned Title IX to their students. A review of eight best-selling education foundations textbooks revealed little discussion of gender equity. Finally, gender equity is not usually included in state licensing requirements. A list of participants in the Teacher Equity Project is included. (ND)

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INSTITUTIONALIZING GENDER EQUITY IN TEACHER EDUCATION

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Efforts in recent years to accomplish school reform have been quite instructive. The approaches used by Theodore Sizer, Henry Levin, and James Comer have focused on the school unit. Standards developed by professional associations in mathematics, science and other areas, as well as the Benchmarks project in science education, have focused on curriculum and assessment reform. Top-to-bottom reform of the entire educational establishment in mathematics and science education, from national and state policy makers to individual classrooms, has been the focus of the National Science Foundation's State and Urban Systemic Initiative grants as well as the Department of Education's Eisenhower program. These efforts naturally find echoes in schools and colleges of education, which must also deal with reform efforts in teacher education itself; Holmes Group proposals are prominent but not the only voices to be heard.

But it is one thing to propose reform and quite another to accomplish it. The barriers to effective reform in education are in fact enormous: structural, historical, economic, political, sociological, and psychological, to name only a few.

Reform is even more difficult to accomplish in the area of diversity. In addition to the other barriers, analyzing current educational practices from the viewpoint of underrepresented

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groups can be emotionally upsetting to established groups. Gender equity may be perhaps the most challenging diversity issue to tackle, at least at a non-superficial level: while it may be possible for people of different races to arrange their lives so that they live and work separately, this is not possible for people of different sexes. Changing relations between men and women is frankly a revolution in the way people think about themselves and those closest to them — and therefore understandably unsettling.

Stepping back for a moment from diversity, proposals for change in areas that are emotionally much less delicate are usually disturbing to one degree or another. We in education surely know this! Established groups have a variety of strategies, utilized consciously or not, to avoid dealing with change. There is active resistance, in which people can, for example ...

- Protest that the change constitutes poor educational theory or practice
- Insist it is impossible given competing time or resource demands
- Charge that the demand for it is due to excessive political correctness

Passive resistance is easier and more common, however. It allows people to ...

- Give lip service only to the change
- Carry it out for a short while before reverting to business as usual
- Insist on learning more — and more and more — about the change before implementing it
- Assign responsibility for it to a weak or unpopular person
- Have only one person working on it while leaving the majority free to continue in the old ways

People can also simply ignore calls for change.

Having worked on gender equity in education for about twenty years, I have seen all these forms and more. In most cases, however, people who resist gender equity reform are not evil, mean or bigoted. Often, they resist because they honestly do not see the need for the change, and the reason for that is that they do not notice the need. Much gender bias, like bias on racial/ethnic grounds, is not deliberately intended. To the contrary, it is usually inadvertent, and therefore subtle, and therefore invisible to everyone but those who have been sensitized to the forms it takes — those who live it and those who have learned about it "from the outside." Gender bias is however quite powerful, especially in my own field of mathematics, science and technology education. The Bureau of Labor Statistics reports that in 1994 women were 30 percent of employed scientists and 8.5 percent of engineers. These imbalances start in the schools. And for teachers, they start in preservice education.

It is frustrating to realize that nearly entirely, the main gender equity action arena in the past 25 years has been in K-12 education, not in teacher education. As a result, new teachers enter classrooms every year unaware that there is a problem with girls and mathematics, science and technology, let alone how to address it. And much effort is expended to try to reach inservice teachers and help them correct years of bad teaching with respect to gender simply because they never knew any better. This is an approach that makes no sense.

I designed the Teacher Education Equity Project, funded for $1,028,000 by the National Science Foundation, IBM, Hewlett-Packard, and AT&T to bring gender equity to teacher education. Carried out from 1993 to 1996, the project worked with 61 teacher educators in 27 states who teach methods courses in mathematics, science and technology to help them teach their preservice students about gender equity. This was accomplished via a five-day seminar with eight instructors, large quantities of materials, $750 per participant to carry out a mini-grant project, a listserv, bimonthly newsletters, a three-day followup meeting taught by participants themselves, and a considerable amount of support from project staff. A book of

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activities tested by participants will be published by Erlbaum Associates in late 1996. Written by myself, Janice Koch and Josephine Urso, its working title is *Gender Equity in Teacher Education*.

The project clearly accomplished what it set out to do. It has had a stunning multiplier effect. In only one year, the 61 teacher educators taught a total of 5,000 preservice education students about gender equity in mathematics, science and technology. They also taught a total of 5,000 others — colleagues, inservice teachers, parents and others. These numbers will continue to grow: what the participants now know they can never again un-know. And the number of girls whom the new teachers will encourage to persist in math, science and technology over the years will be in the hundreds of thousands.

While the evaluation is not yet complete, we do know that the percentage of participants whose syllabi mentioned gender equity doubled (from 23 percent to 48 percent) while those whose syllabi specifically targeted gender equity increased sevenfold (4 percent to 27 percent). By a measure devised to measure pre/post teaching, 85 percent of the participants changed in a more equitable direction, most quite substantially. In another pre/post measure, the percentage of participants who spontaneously mentioned the impact of gender equity issues on their lives increased from zero to 21 percent.[1]

As wonderful as these results are, I now realize that they are limited because we focussed on the individual teacher educator as our change unit. To be sure, participants' activities influenced not only their students but also their education colleagues, their Arts and Sciences colleagues, and faculty in their field placement schools. Of these groups, however, the only one to be reached reliably and predictably was students.

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[1] The evaluation is being carried out by Dr. Patricia B. Campbell of Campbell-Kibler Associates of Groton, Massachusetts.

This matters. When students learn in their methods course about the subtle but powerful effects of gender bias in math, science or computer class — biases in teacher/student or student/student interactions, curriculum materials, assessment, parental expectations, societal influences, and other areas — and learn how to reverse the impact of these biases, they need reinforcement from other professional authority figures. If their mathematics, science or technology professors, other education professors, and cooperating teachers fail to emphasize the importance of gender equity or worse, demonstrate gender biases in their own teaching, students can hardly be blamed if they conclude that gender equity is a lot of fuss over nothing. We are back to square one.

But are we *sure* that people who teach mathematics, science and technology methods courses don't regularly include attention to gender? In 1993-1994 we carried out a national survey of methods course instructors in math, science and technology, drawn from a sample of AACTE member institutions. With 344 respondents — a response rate of 73 percent, we learned that only 17 percent thought they covered gender equity well and that they tended to do so reactively, when it happened to come up in class discussion. Only 15 percent mentioned Title IX to their students.

Perhaps gender equity is carefully covered in foundations courses? According to a recent review of eight best-selling foundations textbooks[2], there was "little discussion of gender equity, suggesting low interest in this area by educators." Moreover, the author concluded, "the eight textbooks treat issues of gender as simply a matter of roles. The overwhelming absence of talk about women's history in American education, law reform for gender equity [this refers primarily to Title IX], and feminist analyses of schooling is conspicuous." Apparently we

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[2] Titus, Jordan J. (1993). "Gender Messages in Education Foundations Textbooks" in the *Journal of Teacher Education*, vol. 44, no. 1 (January-February), pages 38-44.

cannot assume that gender equity is adequately covered in foundations courses but even if it were, they are not be the appropriate forum for a science education student, for example, to learn about strategies for ensuring gender fairness in science lab environments.

Perhaps state licensure requirements specify that gender equity must be taught and we could do something to get that word out? In 1994 we contacted all 50 state departments of education to find out if gender equity instruction or demonstrated competence was required of new teachers. We learned that only nine states referred to gender and nearly all of them did so only in passing, as in "..... race, national origin, gender, disability, etc. ..." This is obviously not a very powerful influence.

Taking still another tack, we conducted telephone interviews in 1994-95 with 20 deans of education across the country (again drawn from the AACTE membership), asking them what deans could do to promote the teaching of gender equity in education courses. We found out that many did not understand the issue. Thinking that gender equity in education meant affirmative action, they told us about the number of women hired in their areas. A number mentioned the fact that deans could not dictate the content of individual professors' courses but could exert leadership and model behavior. A few mentioned their ability to provide funds as an inducement. On the other hand, many expressed concern about being seen as "a dean with an agenda" or a "one-issue dean." Not to be overly critical, but I have no trouble imagining other issues in teacher education that deans would be proud to be identified with. Perhaps the problem is not *one* issue but *this* issue.

I do not mean to single out deans or chairpersons of education as culprits. Higher education is in many ways a communal enterprise, and few deans are in a position to have their orders obeyed instantly by subservient professors. Nevertheless, the question remains: how do we achieve systemic, institutional change in teacher education with regard to gender equity?

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Without achieving this, we are reliant upon the good will and caring of committed faculty members who understand the costs of gender bias and are able to teach their students how to avoid them. An education faculty can have a few of them, or one, or often none. Gender equity deserves to be valued as too fundamental an educational issue for this kind of treatment.

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